

Case report on unusual tumor with synchronous cutaneous and gastrointestinal tract involvement

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ABSTRACT

Histiocytic sarcoma (HS) is an exceedingly rare lymphohematopoietic malignancy with morphological and immunophenotypic characteristics of mature tissue histiocytes. We report a unique case of a HS with synchronous skin and gastrointestinal tract involvement which has not been reported in literature till date to the best of our knowledge. A 70-year-old male farmer presented with multiple ulcerated skin lesions ranging from 0.5 to 10 cm all over the body. Autopsy revealed multiple transmural nodular deposits in stomach, intestines, head of pancreas, and peripancreatic tissue. Histopathology and immunohistochemistry profile was consistent with HS exhibiting positivity for CD68, CD163, and lysozyme. CD 163 identifies histiocytic malignancies with high degree of specificity and has become a promising marker for their diagnosis.

Keywords: Histiocytic sarcoma, malignant melanoma, non-Hodgkin's lymphoma, undifferentiated carcinoma

Introduction

Histiocytic sarcoma (HS) is a rare but aggressive hematopoietic malignancy with morphological and immunophenotypic characteristics of mature tissue histiocytes. It accounts for <1% of all nodal or extranodal lymphoid tissue neoplasms. Most cases are seen in adult age group. Median age is 46 years with male predominance.^[1-3] This rare tumor most commonly affects lymph node. Very few case reports of histiocytic sarcoma involving gastrointestinal tract (GIT) have been published in literature with disseminated disease.^[4] Up to date, to the best of our knowledge, no case has been reported with synchronous involvement of GIT and skin. We herein report a unique case of a histiocytic sarcoma with synchronous GIT and skin involvement.

Case Report

A 70-year-old male farmer presented in skin outpatient department with multiple firm, erythematous, and ulcerated skin nodules all over his body for 35 days. The patient had no history of fever, chest pain, cough, cold, or any previous major medical illness. A provisional clinical diagnosis of cutaneous T-cell lymphoma was considered and skin biopsy with other basic investigations was planned. Suddenly patient developed altered sensorium and respiratory distress and was brought to emergency. On systemic examination, bilateral chest had rhonchi. Hematological and biochemical investigations were found to be within normal limits. Oncology reference and radiology workup were asked for but the patient succumbed to his illness within 24 h of admission. A complete autopsy was performed. External

examination exhibited multiple skin nodules all over his body ranging from 1 to 10 cm in diameter [Figure 1a]. A few nodules had central ulceration. Systemic examination revealed multiple transmural nodular deposits in stomach, small and large intestines along with pancreas [Figure 1b]. Lungs exhibited features of bronchopneumonia. The histopathological examination of the skin nodules and nodular deposits from GIT revealed a malignant tumor comprising of large monomorphic tumor cells arranged in sheets. The cells were large with round to oval nucleus with prominent nucleoli and moderate amount of eosinophilic cytoplasm [Figure 2a and b]. Mitotic activity was brisk. Initial immunohistochemistry (IHC) workup revealed weak positivity for CD45 and S100 in tumor cells with negative staining for CD 20, CD 3, and AE1-AE3. Ki 67 index was 70%. These findings ruled out carcinoma. Additional markers for lymphoma, melanoma, and histiocytic tumors were performed. The tumor cells were negative for CD5, PAX5, CD30, CD 56, HMB 45, CD 23, CD 38, CD138, Alk 1, and MPO but showed strong positivity for CD 68 [Figure 2c]. CD 68 positivity suggested histiocytic nature of tumor cells and further IHC for CD 1a, lysozyme, and CD 163 was added for confirmation. The tumor cells were diffusely and strongly positive for lysozyme [Figure 2d], focally and strongly positive for 163 and negative for CD 1a, confirming the diagnosis of HS. Since this was a medical autopsy performed with relatives' permission, the body was handed over to the relatives after autopsy as per hospital rules.

Discussion

The term HS was introduced by Mathe *et al.* in 1970 depending on the tumor having histological characteristics of

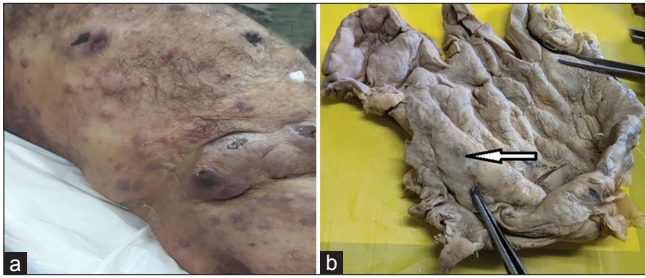


Figure 1: (a) Multiple skin nodules of varying sizes showing central ulceration. (b) Gross image showing transmurular nodular deposits (arrow) in stomach

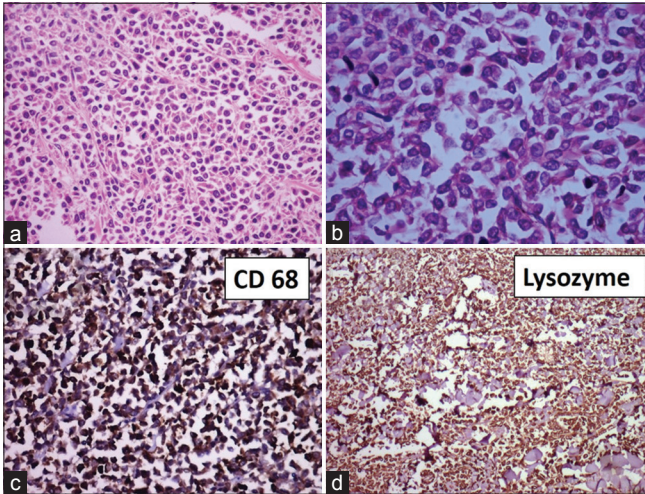


Figure 2: (a). Tumor cells of histiocytic sarcoma HE (100×). (b) Tumor cells of histiocytic sarcoma HE (400×). (c). Diffuse and strong positive staining for CD 68 (100×). (d) Diffuse and strong positivity of tumor cells for lysozyme (100×)

macrophage.^[5] Now according to the WHO definition, it should have morphological and immunophenotypic characteristics of mature tissue histiocytes.^[1] Thus, the diagnosis of HS relies predominantly on the verification of histiocytic lineage through IHC workup. The tumor cells must express one or more histiocytic markers such as CD 163, lysozyme, and CD 68. CD45 is usually positive and S-100 protein may be positive. Poorly differentiated large cell malignancies such as non-Hodgkin's lymphoma, undifferentiated carcinoma, and melanoma have to be excluded through extensive immunophenotyping.^[2] Hence, the tumor cells should be negative for B-cell, T-cell, Langerhans cell, follicular dendritic cell, epithelial, melanocytic, and myeloid cell immunomarkers.

The most common presentation of HS is painless solitary mass at extranodal sites. Gastrointestinal (GI) involvement may present with abdominal mass, pain abdomen, intestinal obstruction, lower GI bleeding, melena, and nausea. Clinical manifestation of cutaneous HS ranges from maculopapular rash to ulcerated solitary lesions and subcutaneous nodules to innumerable tumors on the trunk and extremities. HS of the spleen may have splenomegaly with severe hypoalbuminemia and thrombocytopenia. Lytic bone lesions may be seen.

However, our patient had disseminated disease with cutaneous and GI involvement but presented only with multiple skin nodules and no GI symptoms. HS most often presents at an advanced clinical stage and most patients die of progressive disease within 2 years.^[2]

Hornick *et al.* analyzed 14 extranodal HS of which five were located in the GIT (one involving both stomach and colon, one ileum, two rectum, and one anus).^[4] Bergman *et al.* described morphology, immunohistology, and genotype of 13 cases of true HS.^[6] Six cases presented with primary GI involvement. Stomach is rarely involved by HS compared to intestines.^[4] Yang *et al.* reported a case of HS involving stomach with a large tumor in 2016.^[7] They also reviewed literature from 1996 and described 13 cases of HS affecting stomach. Out of 13 cases, nine cases were confined to stomach only while pancreas was also affected in two cases. Colon and jejunum were additionally affected along with stomach in one case each.^[4,8] Although multifocal involvement of GIT is reported, none of the cases had synchronous cutaneous involvement.

There are very few cases of cutaneous HS reported in literature. De Mers *et al.* mentioned the first bona fide case of cutaneous HS in 2009.^[9] This was a 74-year-old male who presented with non-healing ulcerated lesion on cheek without systemic symptoms. Margo *et al.* described series of five cases of cutaneous HS, which presented as solitary nodules in head and neck and thigh area.^[10]

Conclusion

HS of the stomach with multifocal GI involvement is very rare and even rarer is synchronous involvement of other organ systems like skin. Extranodal HS is a diagnostic dilemma for pathologists. IHC plays a major role in the confirmation of its histiocytic lineage. CD 68, lysozyme, and CD 163 identify histiocytic malignancies with a high degree of sensitivity and specificity. CD 163, a hemoglobin scavenger receptor that identifies histiocytic malignancies cells, has become a promising marker for diagnosis.

Authors' Declaration Statements

The authors' guarantee that the work is original and does not infringe copyright or other party's property rights. All authors have read and approved this submission and have given appropriate credit to everyone who participated in this work.

Patient consent

The patient's consent was taken before reporting the case.

Availability of data and material

The data used in this study are available and will be provided by the corresponding author on a reasonable request.

Competing interest

None to declare.

Funding statement

None to declare.

Authors' contributions

All authors contributed significantly.

Acknowledgment

None.

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